Peer Buddies

The peer buddy model pairs a child with autism with a typically developing peer who is instructed to play & interact with the target child throughout the day. Lauszey & Heflin (2000) had teachers instruct targets & peers to “stay with your buddy” & “talk to your buddy” without any other formal training. By merely increasing the amount of time the buddies spent together, they found an increase in the percentage of appropriate social initiations & responses by the children with autism. A brief withdrawal of the peer buddy system reversed the effects, thereby strengthening evidence for a relation between the intervention & positive outcome. In a more sophisticated design, Roeyers randomized 85 children with autism to either a peer buddy group or a control group (Roeyers 1996). The buddies were provided with brief training on reacting to aggressive behavior, getting the attention of a target child, & general education about autism. Following a brief intervention, the targets demonstrated increased prosocial behavior, social responsiveness, & interaction duration; small increases in initiations were also observed. Although the control group showed minimal gains, the treatment group’s outcomes were significantly above & beyond these changes. One of Roeyers’ interesting findings was that both the children with autism & the peer buddies generalized these responses to untrained members of the classroom, which may be beneficial from a cost-effectiveness perspective. Generalization across peers is a major strength of these programs & is a recurring phenomenon in much of the peer-training literature.
In vivo Modeling

The use of modeling procedures to teach social skills raises some challenges for skills acquisition & generalization. In vivo modeling provides a good method for addressing this obstacle because it can occur in the actual social situation & because the modeled response can vary from trial to trial. The generalization challenge has also been addressed in the in vivo modeling literature by using models who are likely to engage in developmentally appropriate behavior in the natural environment. Peers have been shown to be effective models & training peers can lead to increases in both the frequency of social initiation & the quality of social interactions (Kamps et al. 2002; McGrath et al. 2003). Peer-trained social skills are found to be more robust & facilitate more generalization than adult-centered training (Kamps et al. 2002). Garfinkle & Schwartz (2002) looked at the effects of a peer imitation intervention package on 4 children with autism in an integrated classroom. Each day, certain peers & targets were singled out as “leaders” whom the rest of the students imitated. The authors reported significant increases in imitation for targets & peers, but only small or absent concomitant increases in target social initiations. Because the intervention was implemented only at naturally occurring times throughout the day (as opposed to a systematic schedule), the setting may have lacked sufficient structure to evoke increases in other social behavior. In such a structured setting, Ingersoll & Schreibman (2006) used reciprocal imitation training (RIT) with 5 children with autism. The application of RIT in this context led to universal gains in imitation skills & generalization to new materials, settings, & therapists in 4 of the 5 participants. Unlike Garfinkle & Schwartz (2002) these authors also recorded ancillary gains in other social skills (joint attention & pretend play), making this the first study to experimentally demonstrate the relationship between imitation training & the acquisition of these more complex social behaviors.
Peer initiation training (PIT) is done individually & is more skills-based than the other approaches. Peers learn specific techniques for initiating & sustaining social interaction with targets; this may occur with or without basic education on autism. Lee et al. (2007) taught peers in an inclusion classroom how to interact with targets by sharing, suggesting concrete play ideas, providing assistance, & being affectionate. This training increased the social engagement of 2 children with autism in their classroom. Goldstein et al. (1992) intervened with 5 targets & 10 peers in a classroom setting with a skills-training package to target attending, commenting, responding, & delivering prompts. Following training, 4 of the 5 targets increased in their rate of social interaction; the remaining student showed similar increases after 1 booster session. The study by Owen-DeSchryver et al. (2008) provided initiation training to the peers of 3 targets in a general education classroom; the peers received a rationale for being friends with the targets, a discussion about the targets’ strengths & weaknesses, & strategies to engage their friends in play. Universal increases in responding to social interactions were observed, & 2 of the 3 targets also increased their initiations. Barry et al. (2003) were interested in PIT from an effectiveness standpoint & looked at PIT outcomes outside school. An 8-week group intervention was provided to peers in a non-clinic setting; each week the peers received training & then engaged in play sessions with children with autism from the community. Some small, but not significant increases in the targets’ social behavior were observed. The failure of PIT to generalize to a non-clinic setting may be due to several factors (e.g., limited familiarity, few naturally occurring opportunities to engage, potential inadequate treatment integrity). Overall, the use of peer training procedures in non-classroom settings is an under-researched area. These interventions are potentially useful for targets who are not enrolled in inclusive classrooms, & effectiveness studies are necessary to determine the ways in which they can benefit from peer-mediated treatments.
Peer Tutoring

Peer tutoring, aka “peer-assisted learning” or “peer-mediated instruction,” is a technique that can be used with individual students, small groups of students, or as a class-wide strategy. It involves children acting as tutors to other children (tutees) on a 1-to-1 basis under the supervision of a teacher. The format of peer tutoring varies from highly structured, with training for tutors & a prescribed procedure, through semi-structured tutoring where tutors are provided with guidance but can adapt procedures as they go, to unstructured peer tutoring in which the procedures followed by tutors are not set by teachers. There are also many types of peer tutors including same age tutor & tutee, older tutor to younger child, more able tutor to less able child of the same age or younger, less able child as tutor to younger child, & behaviorally challenged student as tutor to younger less able child. Peer tutoring has been used to support learning across a wide range of academic curriculum areas & has been found to facilitate both cognitive & social gains (Goodlad & Hirst 1989; Topping 2001). The effectiveness of peer tutoring has been demonstrated in many studies (Topping 2005). It can be used in mainstream school classrooms as well as in special classes & special schools. It enables children with Special Educational Needs (SEN) to receive individual attention on a level beyond what class teachers can typically provide, through a relationship in which children feel unthreatened. Through peer tutoring, children receive frequent & immediate feedback on their progress as well as positive reinforcement for their efforts from role models with whom they feel comfortable. Tutors typically gain academically from taking on the role of teaching others, & the responsibility often brings about more positive attitudes & behavior. It can help them develop empathy with others & alter tutors' perception of themselves, bringing about changes in their behavior in addition to the learning of those they tutor. Tutoring younger children can bring a sense of self-worth & success to children with SEN who can benefit as tutors while accruing gains for their tutees.
Video Modeling

Video modeling (VM) involves a competent person performing a targeted skill on videotape; this video is shown repeatedly to a subject, who is then given the opportunity to perform the task in a real-life setting. VM has several advantages over in vivo modeling. 1st, attentional difficulties can be addressed by emphasizing the salient features of the desired task. 2nd, video presentation is conducive to frequent repetition. 3rd, it capitalizes upon motivation; children who characteristically display a lack of inherent desire to engage in learning activities will often enjoy & may even request their VM tapes. Much of VM research focuses on increasing social initiations, a skill which may be especially difficult for children with ASDs because it requires a spontaneous effort, rather than a response to a cue from another person. Nikopoulos & Keenan (2003) did the first systematic investigation of VM to teach social initiations in 7 children with ASD. 4 of the participants acquired the social initiation response & maintained these skills at 1- & 2-month follow-up assessments. Those that successfully initiated also demonstrated generalization across experimenters, settings & stimuli. Video self-modeling (VSM) is another approach in which the child acts as the appropriate model in the video. During these sequences, the child is either prompted by an adult to complete the action successfully or a “perfect” action is spliced from many imperfect tappings. Another study showed that VM can also be used to teach complex social sequences to children with autism (Nikopoulos & Keenan 2007). In this study, 3 children were presented with a video of a peer engaging in a behavior sequence that included a social initiation (e.g., “Let’s play”) & subsequent object manipulation (e.g., picking up a ball). The participants demonstrated expected increases in social initiations & also engaged in more reciprocal play, peer imitation, & less isolated object manipulation. These results were generalized across peers & maintained at 1 & 2 months. It is noteworthy that the skills were acquired without external prompts or reinforcement during the intervention phase, indicating that in an intrinsically motivating setting (i.e., watching a video) spontaneous imitation may be more likely to occur.
Skinner's operant behavior theory explains how people learn by intentionally acting on their environment to acquire what they need for survival; he called this system of purposeful behavior, operant (Skinner, 1938). This conditioning explains how behavior changes as man learns to operate on his environment and affect a feedback or a consequence which is either rewarding or punishing. The two consequences determine the probability of the behavior or response being repeated. Consequences that are rewarding or reinforcing increase the chances of the behavior being repeated, and consequences that are negative decrease the possibility that the behavior will be repeated (Skinner, 1957). This model of learning contributed to this action research by lending clarity to the complexities of the students' behavior and how variables in their environment can be controlled so their responses may be modified.